Version: 1.0

YUANSHIN

Yuanxin Frequency Inverter

PRODUCTS CATALOGUE

ISO 9001   CE

YUANSHIN

源信电气

SHENZHEN · CHINA

COMPANY PROFILE

Yuanxin Electric Tech Co., Limited, dates back to 2009 founding by. Mr, Xie Hongji in Shenzhen city, the silicon valley of China. As a high- tech professional manufacturer, we are fully committed to provide high quality Frequency Inverter products and solutions for all industries.

Since the hard working in past, Yuanxin have improved the friendly use of the products, producing management and service networks. Delivering the customer satisfied products and service is our final policy and promise.

Always pursuing the world class technology, Yuanxin will contribute the best solution to industry automation .

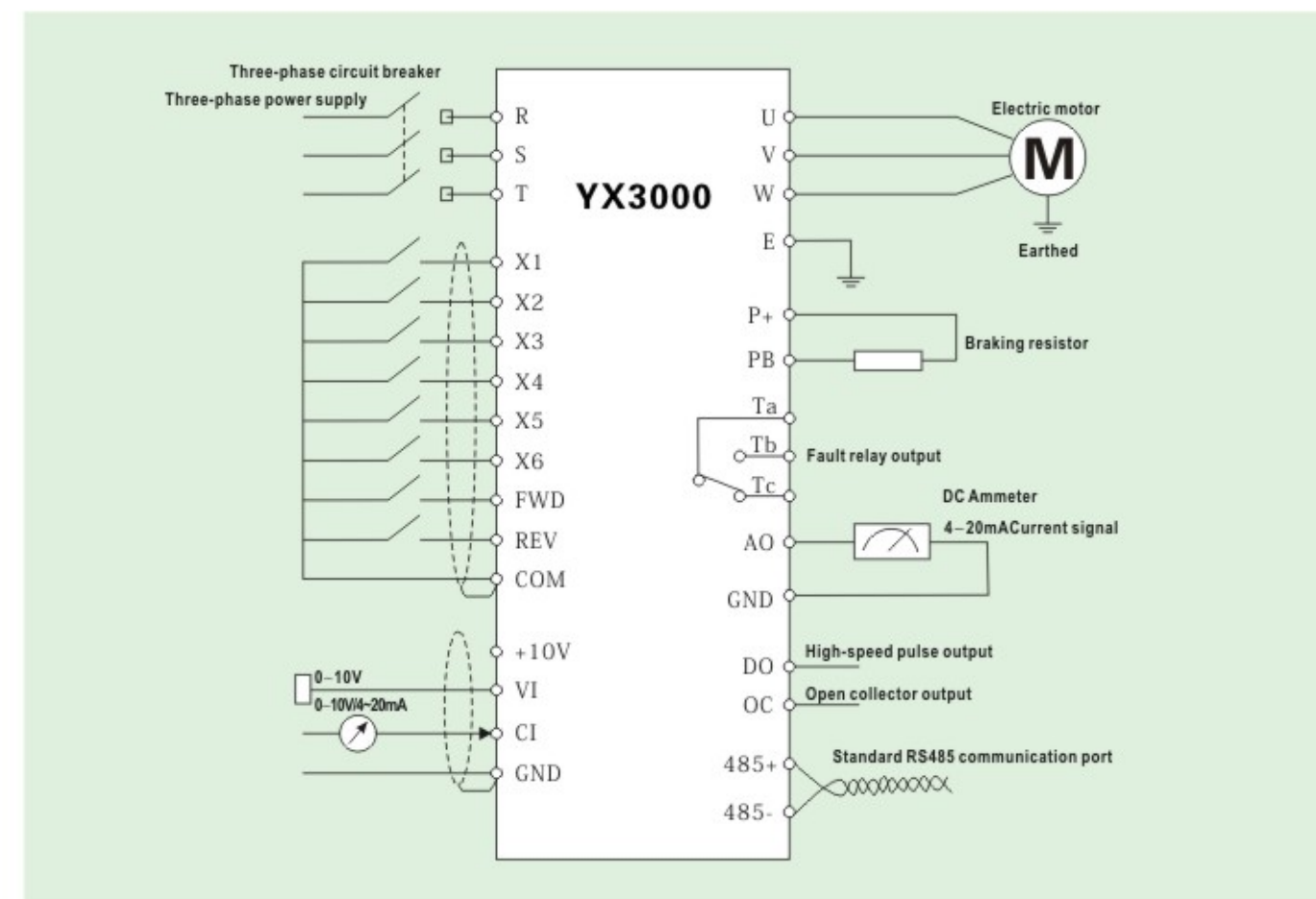## CONTENTS

YX3000 SERIES MINI TYPE INVERTER

Volt: 220V
Power: 0.4kw-3.7kw

Technical Features

◎ High-performance of sensorless vector control, has good low frequency torque;

◎ RS485 serial communication interface supports a standard Modbus communication protocol;

◎ High performance V/F mode with various kinds of V/F curve optional;

◎ Compact size, stable performance and easy to operate;

◎ Easy installation, commissioning and operation .

Applications

◎ Suitable for OEM Machine builder;

◎ Widely applied in textiles, packaging, printing, pharmacy industry ,etc .

YX3000 SERIES GENERAL PURPOSE INVERTER

Volt: 380V-440V
Power: 0.75kw-500kw

Technical Features

◎ Sensorless vector control (SVC)with the best low frequency compensation ability;

◎ The unique sink design and advanced switching mode power supply technology;

◎ Circuit protective technologies and new component improve the anti-interference ability;

◎ Preset frequency, Center frequency and adjustable Swing frequency;

◎ Built-in PLC or Terminals implement muti-speed operation;

◎ Automatic energy saving, optimize V/F curve automatically to save the energy;

◎ Switch input channel, Forwad and Reverse instruction, 8 channels programmable switch input, which can be set respectively 35 kinds of functions;

◎ Strong overload ability, 150% rated current for 1 minute, 180% rated current for 3 seconds;

◎ RS485 standard communication interface, support ASCⅡ and RTU format MODBUS communication protocol.

Applications

◎ Applied with boiler drum, induced draft fan, coal mine ventilator;

◎ Central air-conditioning systems, air compressor energy saving and music fountain;

◎ Water circulating pump,water supply pump,sewage pump,purification pump,constant pressure water supply, oil pump, oilfield water injection pump, etc;

◎ Mine conveyer, coal feeder, blender, pulverizer, air blower, etc;

◎ Extruding machine, bottle blowing machine, film blowing machine, compressor,prayer,etc.

YX3000 SERIES MINI TYPE

YX3000 SERIES
GENERAL PURPOSE

YX9000 SERIES HIGH PERFORMANCE INVERTER

Volt: 380V-440V
Power: 0.75kw-500kw

Technical Features

◎ Control modes: with PG vector control, without PG vector control, V/F control, and torque control;

◎ Overload capacity: 150% rated current for 1 minute, 180% rated current for 10 seconds;

◎ Starting torque:
   with PG vector control: 0.5Hz/200%
   without PG vector control: 0.5Hz/150%

◎ Speed control range:
   with PG vector control: 1:1000
   without PG vector control: 1:100

◎ Speed control accuracy:
   with PG vector control: ±0.05% rated speed
   without PG vector control: ±0.5% rated speed

◎ Speed control method:
   keypad digital setting, analog setting, PC serial communication setting, pulse frequency setting, multi-speed setting, PID regulation setting;

◎ Modulation method:
   space vector pulse width modulation(SVPWM);

◎ Torque control response:
   with PG vector control: <150MS
   without PG vector control: <20MS

◎ PID control,7 channels programmable control;

◎ Multi-speed control function, achieving 16 phases speed control;

◎ Swing frequency control function, suitable for textile industry.

Applications

◎ CNC machine, vertical lathe, grinding machine, gear shaving machine.

◎ Spinning machine, precise spinning machine, loom machine, printing and dyeing machine,paint mixing, handing car and machine.

◎ Plastic machine, ceramic machine, electrical machine, food machine, light industry machine, pharamacy —achine, etc.

YX3300 SERIES PCB TYPE

Volt: 220V
Power: 0.2kw-1.5kw

Technical Features

◎ Compact size, stable performance and cost-effective;
◎ Widely applied in various kinds of mechanical assembling situation;
◎ Equipped with the latest technology of SVPWM(space vector pulse width modulation) control;
◎ Sensorless vector control(SVC), low frequency torque can reach to 150% of rated torque;
◎ RS485, multi-phase PLC control, Multi-speed control, more accurate and convenient;
◎ Built-in dynamic braking unit;
◎ Built-in faults recording function, easy for fault tracking.

Applications

◎ Textile industry, Auto door machine, Winding machine, etc.

WATER SUPPLY KIT

Water supply kit work with YX3000 series inverter to control multi-pumps providing constant pressure water supply.

Technical Features

◎ Achieving 4 pumps linkage working to provide constant pressure water supply；
◎ Achieving multi-pumps working by shift regularly；
◎ Pump hibernating and wake-up fuction；
◎ Pump lock function, switching between single pump and multi-pumps；
◎ Simple interface with inverter,using serial communication.

KEYBOARD FEATURES

Digital display

Frequency(Hz)

Electric current(A)

Voltage(V)

Status lights

Running lights

Function / Data key

Reserve / switch

Shift / monitor

UP key

Run key

Multifunction key

Stop / Reset key

DOWN key

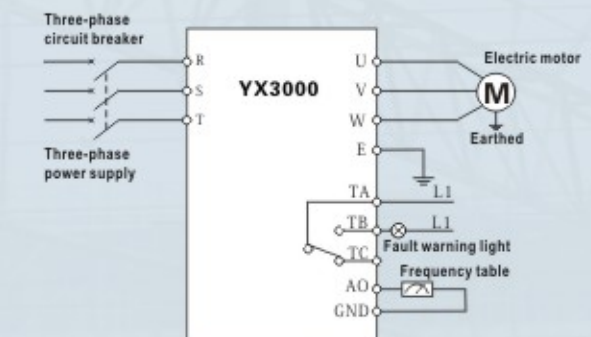| KEY	NAME	FUNCTION DESCRIPTION
FWD	Run key	In keypad mode, press the key to run
REV	Multifunction key	REV key is defined as Reverse function. it is also self-defined key which can be set by parameter code P7.00
STOP	Stop / Reset key	In running status, pressing the key will stop inverter when command given by keypad.In fault status, pressing the key can reset.
MENU	Function / Data key	Enter or exit programming status
▲	UP key	Data or function code increments
▼	DOWN key	Data or function code descending
►►	Shift / monitor	In programming, the key can shift code digit. In other status, the key can shift monitoring parameter.
ENTER	Reserve / switch	In programming, the key can enter next step manual or reserve the setting
●	Digital Potentiometers	Left rotary, the same fuction as UP key. Right rotary, the same fuction as DOWN key. Pressing the potentiometer, the same fucntion as Enter key

General speed control applications

Functions:

◎ Motor speed control. Keypad give Start/ Stop command. Potentiometer adjust the frequency;
◎ External Frequency meter or speed meter can be connected. The output frequency of VFD or motor speed can show;
◎ Alert function.

Applications:

Suitable for general speed control fields, such as conveyer machinery,china shaping machinery,tobacco machinery and metallurgical machinery,etc.
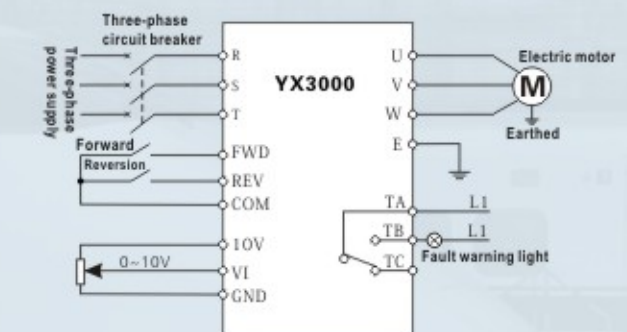

Terminals control operation applications

Functions:

◎ External switch signal control the motor forward and reverse;
◎ External 0 to 10v signal control motor speed;
◎ Fault alarm and current output directive function.

Applications:

Suitable for long-distance motor control field such as fans,food and chemical machinery, packaging machinery and conveyor machinery.
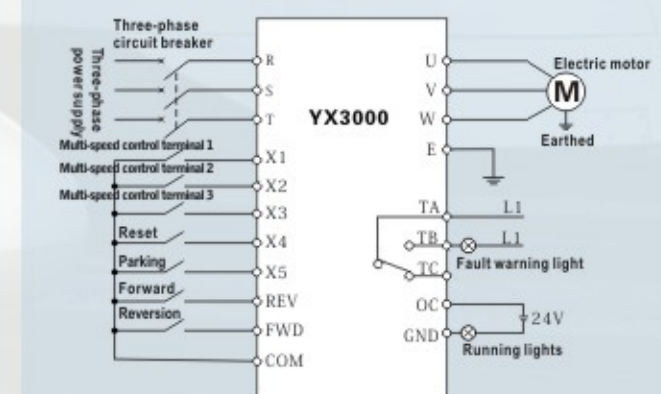

Multi-speed control application

Functions:

◎ External switch signal control motor start/stop;
◎ External switch signal control motor running at the settled frequency;
◎ Has stop and reset function through external swith signal control;
◎ Has fault alarm and operation directive function.

Applications:

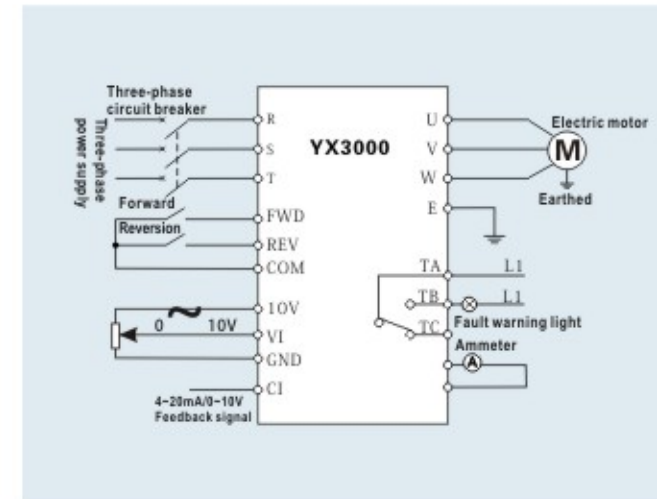Textile, Tempered glass, Washing machine, Chemical industry, etc.

Close-loop control system application

Functions:

◎ Inverter with PID adjustment, automatically adjust the output according to the feedback signal, achieving constant temperature, constant voltage, constant current, etc;

◎ Remote control inverter start/stop;

◎ Has fault alarm and operation directive function.

Applications:

Fans, Water pumps, Constant pressure water supply, Air compressor,Air conditioner,Cooling tower, Music fountain, heating system,etc.which require constant pressure or constant liquid flow.

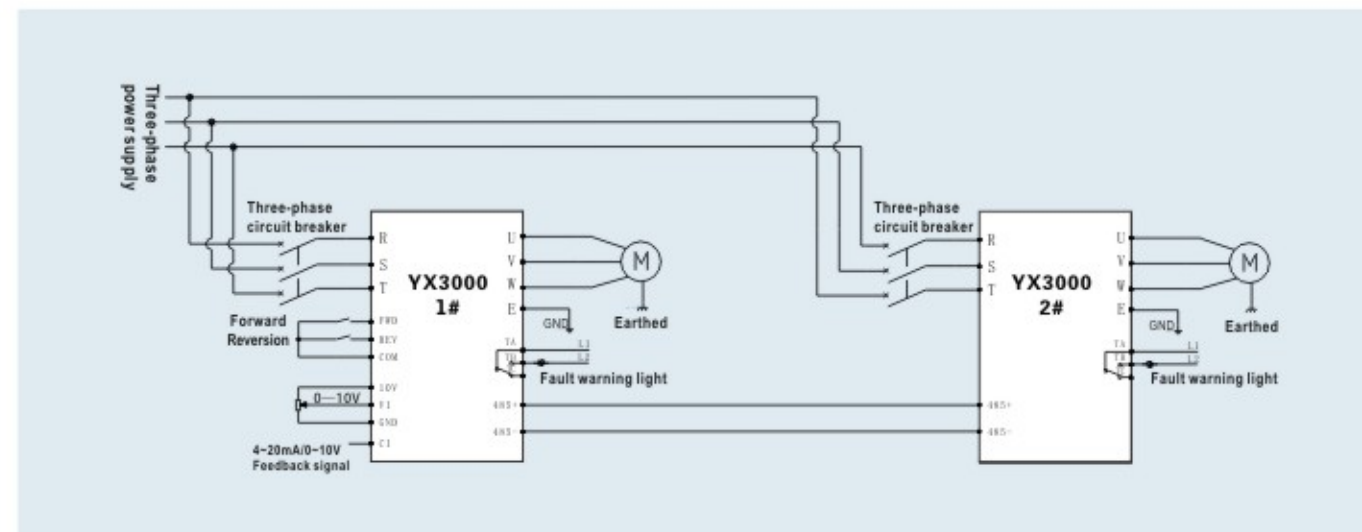## Multi frequency inverters communication

Functions:

External switch signal control 1# inverter operating,The operating frequency of 1#inverter is set by external analog input signal(0-10V).The running status and frequency of 1# inverter will transmit to 2# inverter through RS485 communication,Linkage operation formula will calculate the operating frequency for 2# inverter by checking the parameter P3.13(linkage operation proportion),and then 2#inverter will output corresponding fre-quency.

Applications:

Conveyor, Winding machine, Production line for food and chemical industry, Pulling machine,etc.

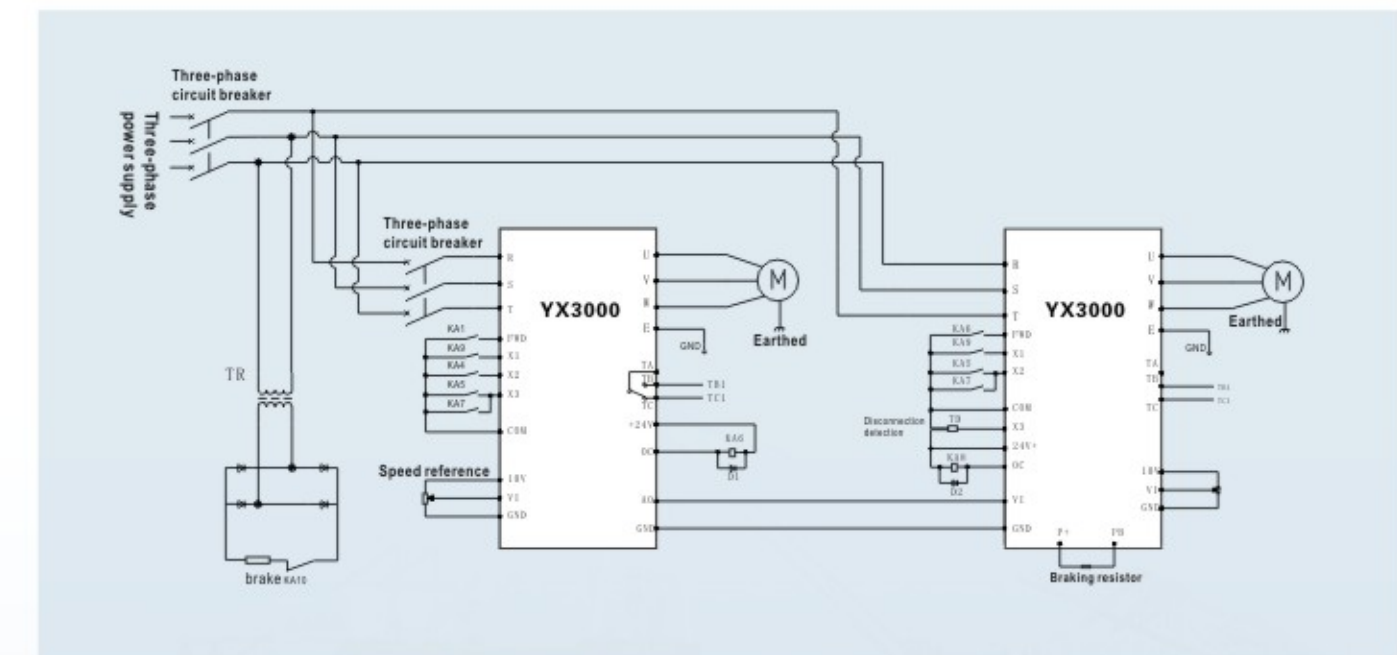## Application in wire drawing machine

Functions:

Dual frequency conversion PID control system, make the wire drawing machine start smoothly, operate stably with constant tension, achieved start and stop at any moment.

Remark: the current of intermediate relay KA6 and KA8 should less than 50mA, otherwise,the external power supply is necessary.
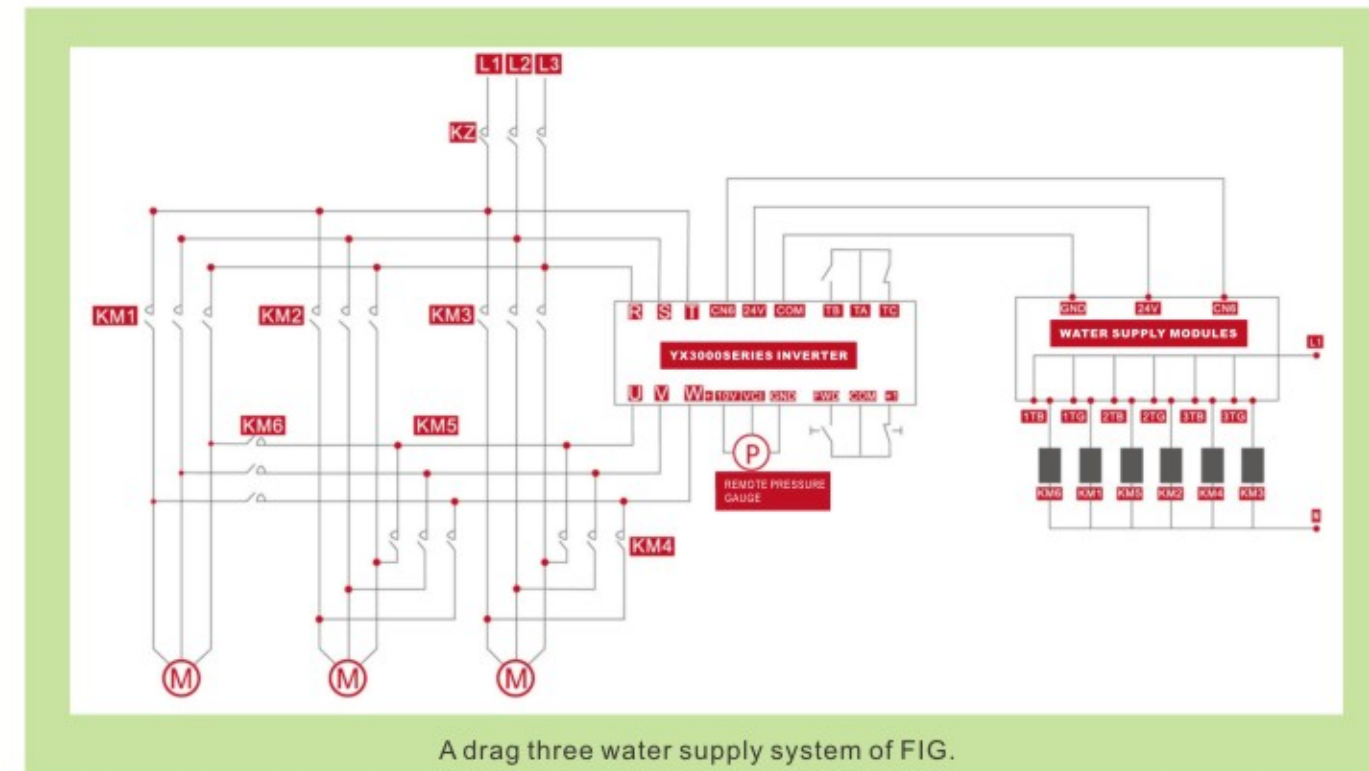
Applications:

Wire drawing machine,Winding machine ,etc.

The application of constant pressure water supply system
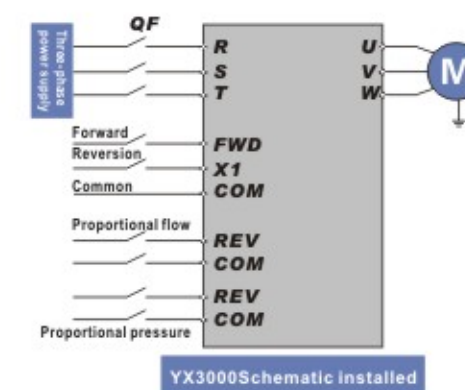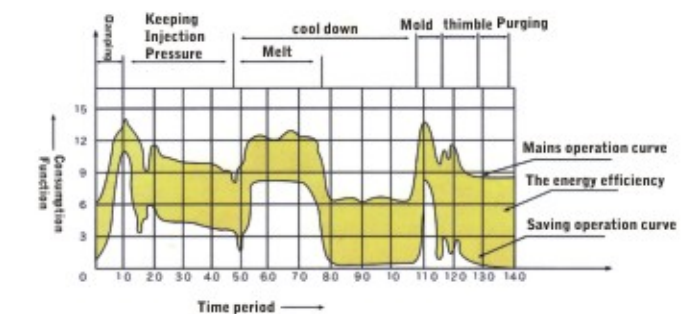

A drag three water supply system of FIG.

Functions:

1. High efficiency, energy saving range 10%~40%;
2. Constant water pressure, the liquid flow could beadjusted within a big range;
3. Safety and sanitation, avoid the secondary pollution of water;
4. Simply management, safety and reliable protec-tion, achieve intelligent automation operation;
5. Long using life-span, protect power grid, reducethe motor abrasion and failure rate;
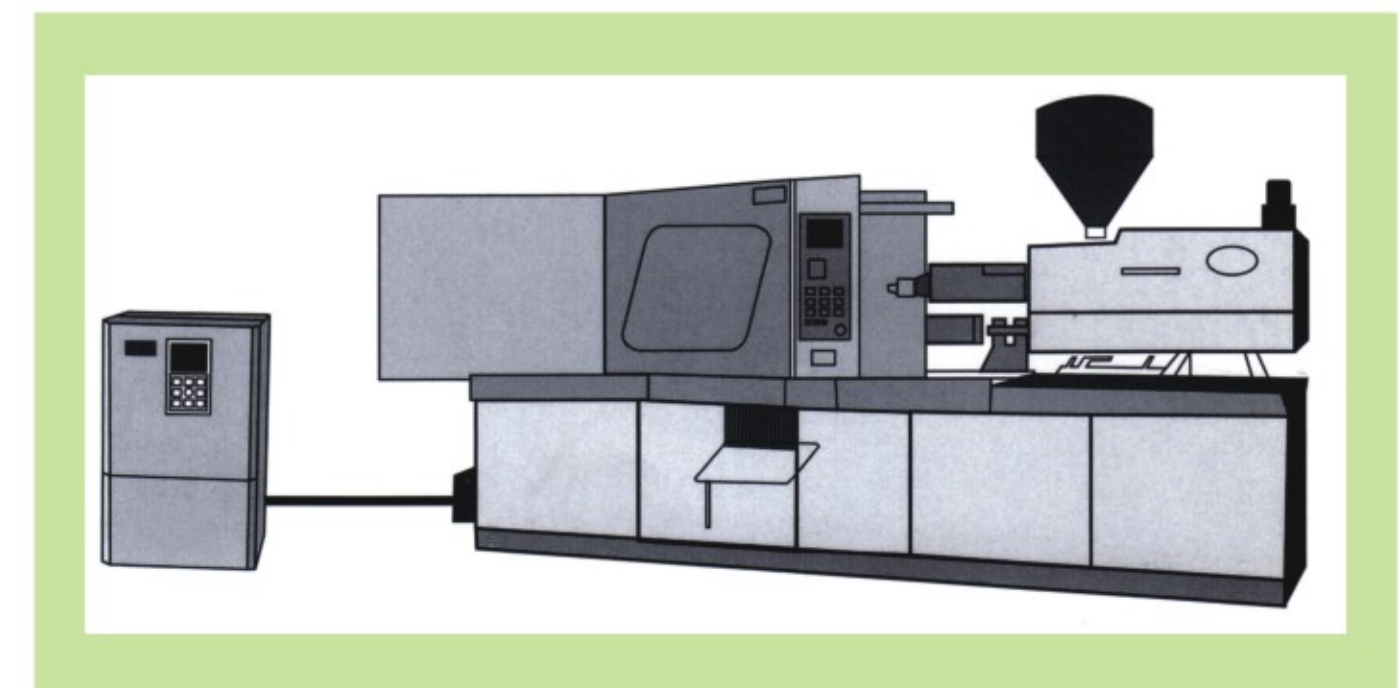6. Cost effective and excellent performance in energy saving.

The application of injection molding machine

The energy saving control system of injection molding mach-ine is designed to proportionally automatic adjust the motor's speed according to the pressure and liquid flow index, and to ensure the machine operate safely and reliably. The applica-tion of frequency inverter will save the energy from the prop-ortion valve.

YX3000Schematic installed

Functions:

1. Using double signal(pressure and flow) input, single flow control will have better performance.
2. Energy saving can reach 60%.
3. High torque output, suitable for the need of injection mol-ding machine speed sudden change
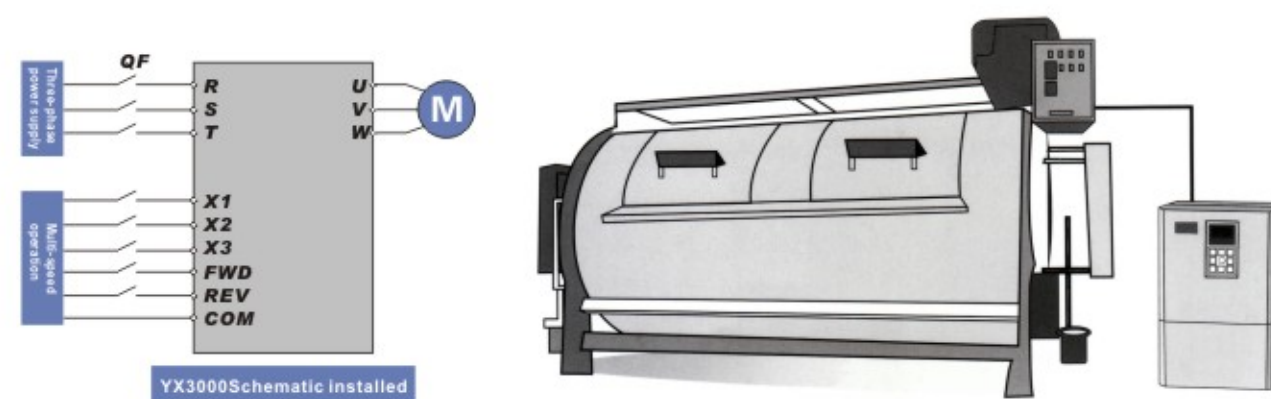4. Fast Dynamic response.

The application of industrial washing machine

Yuanxin frequency inverter fully meet the industrial washing machine for high torque, multi speeds, wide voltage range, automatic torque compensation requirement. VFD provides convenient communication modes. Its stable performance adapts to all kinds of high temperature and high humidity environment in hotels.
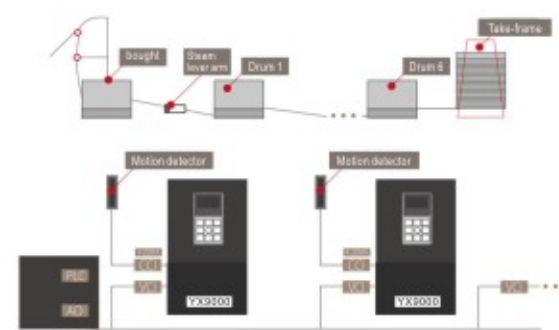

The application of wire drawing & winding machine

Yuanxin VFD is applied in Drawing & Winding process. The strong torque output in low frequency, the excellent dynamic response characteristics, high precision PID control are meeting the requirement of drawing machines working control.
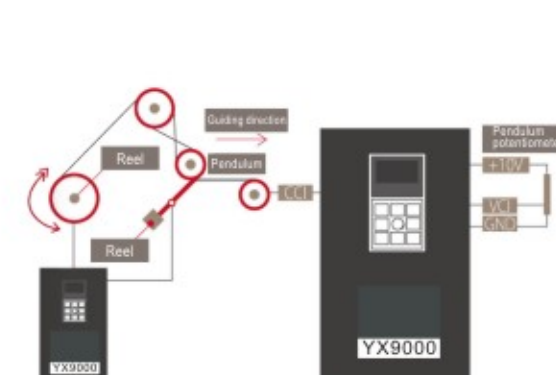
Liner wire drawing machine control solution:

◎ Each drawing die is feed by PID mode. Wire gauge scale meter detect and give the speed parameter. VFD will calculate though inner PID and control the speed of drawing. The sys tem reduces the cost, implementing high precision response and simple operation.

◎ By controlling the torque of each drawing die, the system can control each VFDs' output torque current. It doesn't require tension control mechanism and simplifying the system.

◎ Winding is controlled by adjusting the pressure of swing arm based on PID feedback.
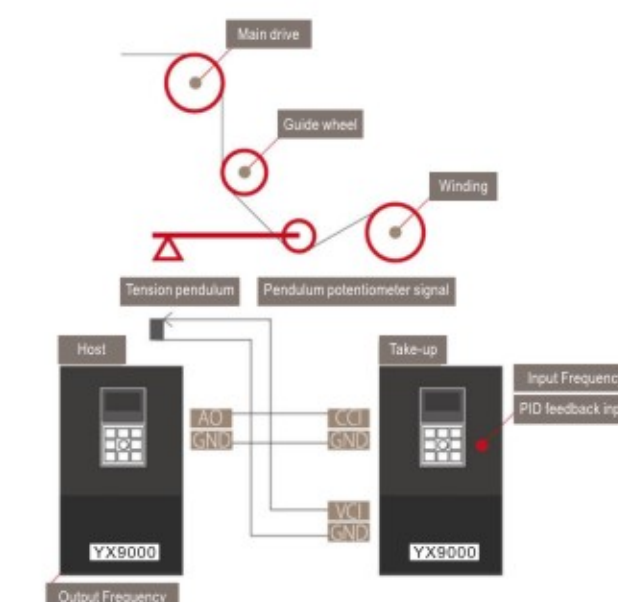
◎ The logical control of system runs by PID command.

Wire laying frame solution`

◎ YX3000/ YX9000 has several combination of frequency channels option. Frequency channels can switched be-tween Master and Slave channels.

◎ VFD run in open vector mode, CI from the upper signal, Slave signal from PID given. Dual channels given adjust the movement and fast tracking.

Wire laying frame solution`

Rolling drawing adopt actual roller diameter value. VFD adjust the given set value of PID according to the change of Roller diameter. PID adjusting range could be minimized to keep the stability of the system. Various input/output logic setting can meet peripheral device control. The system is more simple and stable.
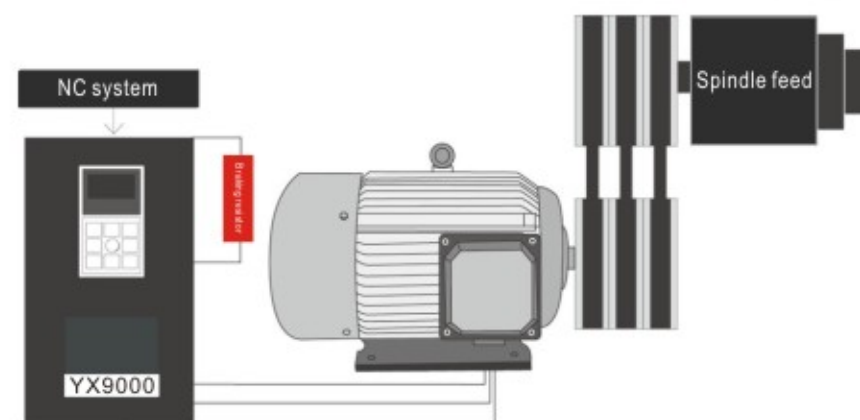
Application in the spindle of CNC machine tool

The spindle of CNC requirement

◎ High torque output at low frequency;

◎ Fast response of dynamic torque with precisely stable speed;

◎ Short time deceleration stop;

◎ Auto tuning of motor parameter;

◎ Multi Frequency commands and operation commands are optional.

The excellent performance of Frequency inverter

◎ Advanced sensor less vector control.

◎ High torque starting, 150% torque at 0.2HZ, 60 seconds

◎ Carrier frequency range 0-14KHZ can be adjust according to temperature and load.

◎ Compatible Analogue input terminals, 0-10V/ 0(4)-20mA

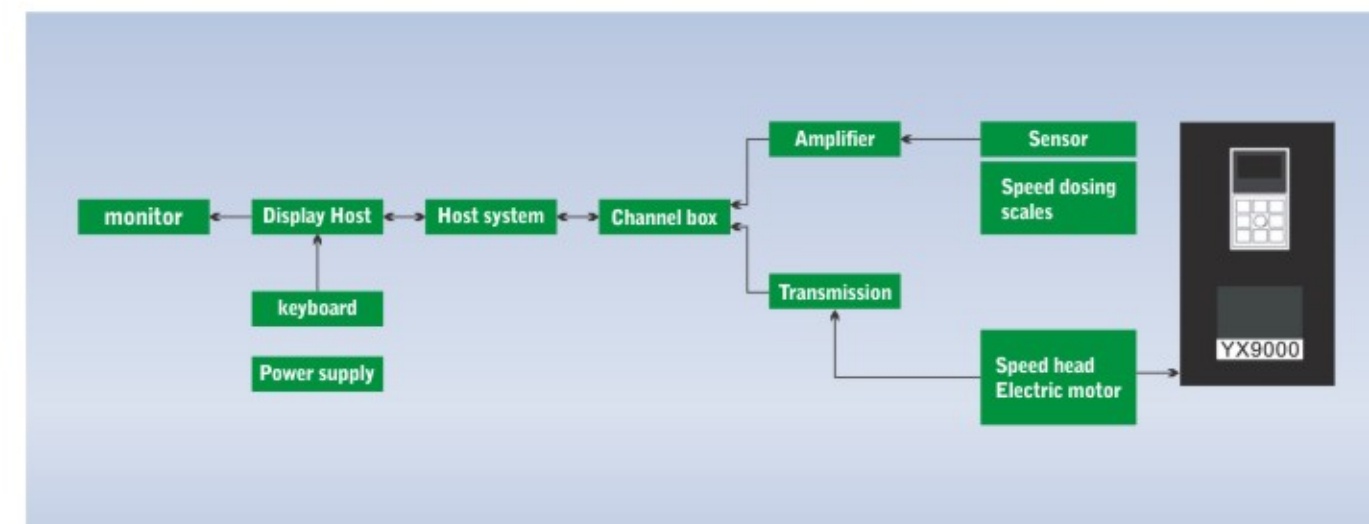◎ Multi functional output terminals can meet the requirement of spindle running status monitoring.

Yuanxin Frequency inverter in Cement plant

VFD have wide application in Cement plant for energy saving and speed adjustment such as Grinding units, Vertical shaft kiln, Ball mill, Rotary shaft Kiln, Vertical Roller mills, Conveyor, Dryer, Fan and Pump.

Feature of Yuanxin VFD in Cement

◎ Meeting the Frequency speed rate 10:1 of cement manufacturing process.

◎ Wide using VFD will enhance the automatic control level and energy saving. By the Field protocol communication, it reduces the equipments maintenance labor cost.

◎ V/F characteristics is adaptable to Pump and Fan (Various torque). When load feature is square torque, VFD in V/F mode will output lower Voltage to save energy.

Application in Textile industry

01 YX3000/YX9000 have multi-class speed synchronous control. Frequency channels given by Analogue terminal input/ output, pulse input/output and Field bus protocol communication. Frequency given calculation and compensation can meet various application.

02 S curve Accelerating and decelerating speedYX3000/YX9000 can output constant torque at 0.2HZ which can start mechanism smoothly.

03 16 or 8 preset frequency givens can be switched by external terminals or inner PLC.

04 Yuanxin VFD built in swing frequency function for textile machine. Central point frequency and Triangle Wave can set separately, working with built in PLC or close loop control.

05 YX3000/YX9000 build in Counter. When Counter reach preset value, VFD will alert or stop.

06 Torque response time of close loop control less than 100ms

07 YX3000/YX9000 with special tension control software can calculate the Roll diameter, Inertia and tension. Simplify the winding tension control system.

08 DC bus terminals can connect to protector device and implement Common DC bus.

System requirement

◎ Carding and Dyeing plant line request Multi motors synchronized speed output ;

◎ Roving machine and Spinning machine request smooth starting and fast braking ;

◎ Multi speed operation ;

◎ Swing frequency is needed ; .

◎ Knitting machine request auto stop, while error occur and spin end ;

◎ Drawing frame machine request the speed of needle is adjustable according to diameter of cloth block ;

◎ Dyeing and printing machine request large range speed change & constant tension control ;

◎ Chemical fiber production line and Dealing line request Common DC bus to save energy consumption.

Rigorous innovation
continuous improvement